

**Exhibit 16 to Statement of Undisputed Facts Filed in Support of Motion of American
Beryllia, Inc. For Summary Judgment**

MARTYNY AFFIDAVIT EXCERPTS

**UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF MASSACHUSETTS**

Suzanne Genereux, et al.)	
)	
Plaintiffs,)	
)	Case No. 04-CV-12137 JLT
v.)	
)	
American Beryllia Corp., et al.)	
)	
Defendants.)	

PLAINTIFFS' EXPERT AFFIDAVIT BY JOHN W. MARTYNY, Ph.D.

1. I was asked by counsel for the plaintiff to prepare a report regarding beryllium exposures to Mrs. Suzanne Genereux who worked at the Raytheon facility located in Waltham, Massachusetts. Mrs. Genereux worked at the Waltham facility from 1982 through 1990.

2. This report provides my expert opinion regarding such exposures while working at that facility, and the related issues of risk, the necessity and adequacy of warnings, and industrial hygiene considerations. All of the opinions contained in this report are expressed within a reasonable degree of scientific certainty and are based on my personal knowledge, training, education, and experience.

3. I am an Associate Professor employed by the Division of Environmental and Occupational Health Sciences at the National Jewish Medical and Research Center in Denver, Colorado. I am also an Assistant Professor in the Preventive Medicine and Biometrics Department at the University of Colorado

School of Medicine. I am a Certified Industrial Hygienist certified by the American Board of Industrial Hygiene since 1987.

4. My experience with beryllium and beryllium exposures dates from the mid 1980's when I participated in an epidemiological investigation of chronic beryllium disease at the former Rocky Flats Nuclear Weapons Plant. At that time I conducted an industrial hygiene evaluation of exposure data obtained at the plant, as well as interviewing numerous beryllium workers at the facility. The results of the study were published in 1993 in the American Review of Respiratory Diseases.⁽¹⁾

5. Since that time, I have been involved with different beryllium facilities throughout the United States and Canada. I have conducted many industrial hygiene investigations at government and private facilities as well as advising beryllium facilities regarding employee protection. I have been a participant in several beryllium epidemiological studies and have conducted beryllium research projects of my own.^(2 - 7) It is because of this experience that I was asked to write this report. My qualifications and publications are detailed in my Curriculum Vitae, which is attached to this report.

Background:

6. Beryllium is a silver-gray metal known for its lightness, stiffness, corrosion-resistance, and ability to disperse heat rapidly. In addition, when alloyed with other metals (e.g. copper or aluminum) it tends to pass on these qualities to the primary metals. For these reasons, it is widely used both as an

exposure each day." Although this extensive effort is seldom conducted in workplaces, it is important that enough samples be taken in order to correctly identify the exposure of the individuals working in each SEG.⁽³⁴⁾

- e. In the publication entitled "Fundamentals of Industrial Hygiene", the authors indicate; "Differences in work habits of individual workers can significantly affect levels of exposure. Even though several workers are performing essentially the same tasks with the same materials, their individual methods of performing their work could affect the contaminant concentration to which each is exposed."⁽²⁹⁾
- f. The DOE Chronic Beryllium Disease Prevention Program requires that employers perform an initial monitoring program that is statistically based to obtain a sufficient number of sample results to adequately characterize exposures. The Program also requires that the exposure levels be determined by conducting personal breathing zone sampling.⁽¹⁴⁾

61. Failure to conduct this type of sampling may result in extremely high exposures to unprotected employees due to the lack of recognition of dangerous tasks. For example, changing HEPA filters in ventilation control systems frequently result in some of the highest exposures that we have found. In the case of the Waltham facility, these jobs were reportedly

conducted with no personal protective equipment and no respiratory protection. It is almost certain that workers at the Waltham Facility would be exposed to beryllium levels in excess of the 2.0 ug/m³ OSHA level accepted by Brush Wellman, Inc. and ABC at this time. I base this statement on the following information:

- a. The sandblasting, filing, and grinding of beryllium materials in an uncontrolled situation almost always results in breathing zone exposures that are well above the current OSHA limit of 2.0 ug/m³.
- b. Later samples taken by Raytheon contractors indicate that the dust from the sandblasting area is contaminated with beryllium and that areas around the sandblasting area were significantly contaminated with beryllium as much as 8 years after more controls were installed in the sandblasting hood.
- c. Visible dust emanating from the sandblasting process was reported by several employees. This as well as assures an exposure well above the current OSHA Limit.

62. Brush Wellman, ABC, and Hardric knew or should have known of the high potential for overexposure to beryllium that was occurring at the Raytheon Facility in Waltham, Mass. I base this opinion on the following:

- a. Brush Wellman, ABC, and Hardric knew of the hazards related to the machining of beryllium in an uncontrolled fashion and

confirms this observation. All of the comments regarding the Brush Wellman MSDS's therefore apply to the ABC MSDS's.

68. Brush Wellman Warning Labels

- a. Two separate labels that accompanied packaging of beryllium pre- and post-1985 time period when shipped from Brush Wellman are shown in Exhibits 3 and 2 in Kolanz's deposition, respectively. These labels state at the top "Metalized Beryllia Ceramic, Danger—Inhalation of Dust or Fumes May Cause Serious Chronic Lung Disease." However, these labels suffer considerably from their apparent failure to reach the end users like Ms. Genereux at the Raytheon Waltham facility. The label was not passed forward through the chain of handlers in Raytheon. It was not delivered and there is nothing on the label that indicates that the labeling must be kept with the product. Representatives of Brush Wellman apparently visited the Waltham plant and saw or were aware of the lack of warnings within the beryllium processing areas.
- b. This information is not provided until the advent of the 1990 MSDS even though this information was known previous to that time.

69. ABC Warning Labels

- a. The ABC labels were apparently copied from Brush Wellman's labels or both copied another source. I reiterate my opinion regard these labels as commented on Brush Wellman's labels earlier. There is no date for

these labels but the time frame for Brush Wellman's labels was probably post 1985 when OSHA required cancer labels and MSDS's for beryllia (and nickel) containing products.

b. One of the ABC labels states:

"BERYLLIUM PRODUCT

POTENTIALLY HAZARDOUS MATERIAL

Care should be taken inhaling dust or fumes. Secondary operations which can generate dust or fumes (such as abrading, chemical etching, lapping, grinding, scoring, or firing over 10000°C) must be performed in facilities which meet OSHA standards. "

- i. This label does not adequately communicate the dangers of ABC's products in several respects: (a) it is pure text -- icons, pictorials and graphics could have been used to facilitate noticeability and convey hazardousness; (b) it does not adequately tell the end user that the maximum dangerous airborne level is so small in particulate size and amount, that the level of airborne particles that could cause lung scarring and chronic disease is invisible (as people may think breathing considerable amounts of dust is needed before it is problematic), and (c) it does not tell what can happen if dust and fumes are inhaled (i.e., that they are risking getting lung disease). Although other labels discussed in this affidavit tell about the

potential of Chronic Lung Disease, this one does not.

Consequences information helps to motivate compliance to warning directives, to energize people to avoid a severe hazard.

70. The risks from the use of beryllium and beryllium-containing materials was known and knowable by Brush Wellman, ABC, and Hardric. However, the warning materials supplied by Brush Wellman, ABC, and Hardric with their beryllium-containing products did not adequately communicate warnings and instructions. They failed to provide the users of those products, including Suzanne Genereux, with information about the nature and extent of the dangers associated with the use or foreseeable misuse of their beryllium-containing products. The warning labels and other documents such as the MSDS's that the Defendants supposedly placed into the chain of commerce did not provide adequate information so as to avoid foreseeable risks.

Submitted by: John W. Martyny, Ph.D., CIH
Associate Professor
Division of Environmental and Occupational Health
Sciences
National Jewish Medical and Research Center